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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission	20

Application Number	10/734501
Filing Date	December 12, 2003
First Named Inventor	Palliyil, Sudarshan
Art Unit	2139
Examiner Name	James R. Turchen
Attorney Docket Number	JP920030154US1

ENCLOSURES *(Check all that apply)*

- [x] Fee Transmittal Form
  - [x] Fee Attached
- [ ] Amendment/Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Reply to Missing Parts/ Incomplete Application
  - [ ] Reply to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
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- [ ] Terminal Disclaimer
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- [ ] After Allowance Communication to TC
- [x] Appeal Communication to Board of Appeals and Interferences
- [ ] Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- [ ] Proprietary Information
- [ ] Status Letter
- [ ] Other Enclosure(s) (please identify below):

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Law Office of Anthony England		
Signature	Anthony V.S. England		
Printed name	Anthony V.S. England		
Date	2-19-2008	Reg. No.	35,129

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Application Number	10/734,501
Filing Date	December 12, 2003
First Named Inventor	Sudarshan Palliyll
Art Unit	2139
Examiner Name	James R. Turchen
Attorney Docket Number	JP920030154US1

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§ 1.48 - for correcting inventorship, except in provisional applications.
§ 1.52(d) - for processing a nonprovisional application filed with a specification in a language other than English.
§ 1.53(b)(3) - to convert a provisional application filed under § 1.53(c) into a nonprovisional application under § 1.53(b).
§ 1.66 - for entry of late priority papers.
§ 1.71(g)(2) – to enter an amendment to the specification for purposes of 35 U.S.C. 103(c)(2) if not filed within the cited time periods
§ 1.99(e) - for processing a belated submission under § 1.99.
§ 1.103(b) - for requesting limited suspension of action, continued prosecution application (§ 1.53(d)).
§ 1.103(c) - for requesting limited suspension of action, request for continued examination (§ 1.114).
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§ 1.497(d) - for filing an oath or declaration pursuant to 35 U.S.C. 371(c)(4) naming an inventive entity different from the inventive entity set forth in the international stage.
§ 3.81 - for a patent to issue to assignee, assignment submitted after payment of the issue fee.

Anthony V.S. England
Signature

2-19-2008
Date

Anthony V.S. England
Typed or printed name

35,129
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Application No. 10/734,501
Filing Date 12/12/2003

Docket JP920030154US1

In the United States Patent and Trademark Office

In re the application of: Sudarshan Palliyll		
Filed: December 12, 2003	Group Art Unit:	2139
App. No. 10/734,501	Examiner:	James R. Turchen
Title: Apparatus, methods and computer programs for controlling performance of operations within a data processing system or networks		
Atty Docket No. JP920030154US1		

Mail Stop Appeal Brief - Patents
Commissioner of Patents and Trademarks
PO Box 1450
Alexandria, VA 22313-1450

Sir:

This is an appeal from the Final Rejection of August 28, 2007, in which the Examiner refused to allow pending claims 1-4, 6-14, and 39-63.

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PARTY IN INTEREST

The assignee, International Business Machines Corporation, is the real party in interest.

RELATED APPEALS AND INTERFERENCES

This is the first appeal in the present patent application. There are no related appeals or interferences known to the appellant or its legal representative.

STATUS OF CLAIMS

Claims 1-4, 6-14, and 39-63 are pending in the application. Claim 1 is an independent claim. Claims 2-4 and 6-14 depend from claim 1. Claims 5 and 15-38 were previously canceled. Appellant herein requests cancellation of claims 39-63. All the pending claims stand rejected. Office action, August 28, 2007 (the "Final Office Action"). The claims herein appealed and argued are claims 1 and 13. [1]

SUMMARY OF AMENDMENTS

The present application, filed December 12, 2003, presented original claims 1-38.

In a non-final Office action of March 16, 2007, claims 1-8, and 13-15, 21, 24, and 29 were rejected under 35 USC 102(b) as being anticipated by US 6,021,510 ("Nachenberg"). Claims 9-12, 16-19 and 25-27 were rejected under 35 USC 103(a) as being unpatentable over Nachenberg in view of US 200210138554 ("Feigen"). Claim 20 was rejected under 35 USC 103(a) as being unpatentable over Nachenberg and Feigen in view of US 200110005889 ("Albrecht"). Claims 22, 23, 37, and 38 were rejected under 35 USC 103(a) as being unpatentable over Nachenberg. The March 16, 2007 Office action asserted that claims 30-36 teach the system or software on a storage medium associated with the method claims

[1] Arguments are *not* herein presented regarding all claims remaining in the present application. However, Appellant contends, of course, that all claims are allowable at least because they depend on claims for which arguments are herein presented and which Appellant contends are allowable. MPEP 2143.03 (citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Application No. 10/734,501
Filing Date 12/12/2003
Docket JP920030154US1

SUMMARY OF CLAIMED SUBJECT MATTER

The present application encompasses hash operations, for example for virus scanned files. Upon a new scan, new hashes are computed, which includes reading files to fast memory. Thereafter only files are retained in fast memory selectively, responsive to file size, i.e., only small files are retained. Then additional operations are performed in fast memory for the retained files. In particular, claim 1 recites the additional operations are selected from i) making backup copies and ii) transferring copies of files to other systems.

Claim 1

Claim 1 describes a method for controlling performance of operations in relation to a set of resources within a data processing network. The claim includes steps, as follows:

First step: computing a set of hash values representing a set of resources for which an operation has been performed;

Second step: storing the set of hash values;

Third step: in response to a requirement for performance of the operation, computing a new set of hash values representing the set of resources;

Fourth step: comparing the new hash values with the stored hash values for the set of resources to identify matches between new hash values and stored hash values;

Fifth step: determining that performance of the operation is not currently required for resources for which a match is identified between the respective new hash value and a stored hash value;

Sixth step: performing the operation for resources for which no match is identified between the new hash value and any stored hash value;

Seventh step: wherein the step of computing a new set of hash values comprises reading the set of resources from a first storage medium of a system in the data processing network into a second storage medium of the system, the second storage medium providing faster access than the first storage medium,

Eighth step: wherein the computing of the new set of hash values accesses the set of resources read to the second storage medium, and the method further comprises:

Ninth step: comparing each resource of the set of resources with a maximum size limit to identify a subset of the resources, wherein each resource of the subset is smaller than said size limit; and

Tenth step: retaining said subset of resources within said second storage medium and

Eleventh step: performing, for the subset of resources retained within said second storage medium, further operations on ones of the subset of resources, the further operations being selected from operations including:

Twelfth step: making backup copies and transferring copies of the resources of the subset of resources to other systems.

The specification of the present application provides an exemplary embodiment of the invention. The specification describes the method of claim 1 in terms of that embodiment. Specifically, regarding claim 1, see original published application, Fig. 1, paragraph 0009 (method for controlling performance of operations in relation to a set of resources within a data processing network 70); see original published application, Fig. 2, paragraph 0056 (computing 300 a set of hash values representing a set of resources for which an operation has been performed); Fig. 2, paragraph 0057 (storing 220 the set of hash values); Fig.'s 3, 6, and 7, paragraph 0059 (in response to a requirement for performance of the operation, computing 300 a new set of hash values representing the set of resources); Fig.'s 3, 6, and 7, paragraph 0059 (comparing 310 the new hash values with the stored 220 hash values for the set of resources to identify matches between new hash values and stored hash values); Fig.'s 3, 6, and 7, paragraph 0059 (determining 340 that performance of the operation is not currently required for resources for which a match is identified between the respective new hash value and a stored hash value); Fig.'s 6 and 7, paragraph 0096 (performing the operation for resources for which no match is identified between the new hash value and any stored hash value); paragraph 0084 (wherein the step of computing 300 a new set of hash values comprises reading the set of resources from a first storage medium of a system in the data processing network 70 into a second storage medium of the system, the second storage medium providing faster access than the first storage medium); paragraph 0084 (wherein the computing 300 of the new set of hash values accesses the set of resources read to the second storage medium, and the method further comprises); paragraph 0084 (comparing each

resource of the set of resources with a maximum size limit to identify a subset of the resources, wherein each resource of the subset is smaller than said size limit); paragraph 0084 (retaining said subset of resources within said second storage medium); paragraph 0084 (performing, for the subset of resources retained within said second storage medium, further operations on ones of the subset of resources, the further operations being selected from operations); paragraph 0084 (making backup copies and transferring copies of the resources of the subset of resources to other systems).

Claim 13

Claim 13 further limits claim 1, stating that at least one resource of the set of resources comprises a group of files. Claim 13 also further limits claim 1, reciting that the step of claim 1, computing a set of hash values, comprises an additional step, computing a single hash value for the group of files. Regarding support for claim 13, see, e.g., paragraph 0013 (at least one resource of the set of resources comprises a group of files and the step of computing a set of hash values comprises computing a single hash value for the group of files).

Application No. 10/734,501
Filing Date 12/12/2003

Docket JP920030154US1

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-4, 6-8, and 13-14 stand rejected under 35 USC 103(a) as being unpatentable over Nachenberg.

ARGUMENTS

Rejection Under 35 USC 103(a) over Nachenberg

Claims 1-4, 6-8, and 13-14

Independent claim 1 and dependent claims 2-4, 6-8, and 13-14 stand rejected over Nachenberg. Appellant respectfully submits that the rejection is improper and herein below separately argues claims 1 and 13.

The Examiner's Position

The Examiner cites Nachenberg as the only reference and states the following arguments:

Regarding claim 1:

Nachenberg discloses a method, system and computer program product for identifying data processing systems within a network having a vulnerability comprising: computing a set of hash values representing a set of resources for which an operation has been performed (column 4 lines 5-8); storing the set of hash values (column 4 lines 5-8); in response to a requirement for performance of the operation, computing a new set of hash values representing the set of resources (column 4 lines 40-47); comparing the new hash values with the stored hash values for the set of resources to identify matches between new hash values and stored hash values (column 4 lines 48-63); determining that performance of the operation is not currently required for resources for which a match is identified between the respective new hash value and a stored hash value (column 4 lines 48-53); and performing the operation for resources for which no match is identified between the new hash value and any stored hash value (column 4 lines 54-63). Nachenberg also discloses wherein the step of computing a new set of hash values comprises reading the set of resources from a first storage medium of a system in the data processing network into a second storage medium, the second storage

medium providing faster access than the first storage medium, wherein the computing of the new set of hash values accesses the set of resources read to the second storage medium (column 4 lines 29-31), and the method further comprises: comparing each resource of the set of resources with a maximum size limit to identify a subset of the resources, wherein each resource of the subset is smaller than said size limit (it is obvious that the data does not exceed the storage threshold (maximum size of the memory) of said second storage, this is a common feature of memory management), and retaining said subset of resources within said second storage medium (it is obvious to hold only the amount that is available in said second storage, Nachenburg teaches the use of sectors (column 3 line 66 to column 4 line lo), which are fractions of the original file). Nachenberg, however, does not disclose performing, for the subset of resources retained within said second storage medium, further operations on ones of the subset of resources, the further operations being selected from operations including making backup copies and transferring copies of the resources of the subset of resources to other systems. Making backup copies is well known in the art and it would have been obvious to one of ordinary skill in the art at the time of invention to make backup copies for system restoration in the event of a disaster such as hardware failure, system intrusion, etc. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to backup the files after the virus scan deemed the files virus-free.

Regarding Claim 13:

Nachenberg discloses the method of claim 1, wherein at least one resource of the set of resources comprises a group of files (column 3 lines 14-15 discloses the use of Norton Antivirus (NAV) which contains the capability of scanning compressed files (see Norton Antivirus Enterprise Solution 4.0)) and the step of computing a set of hash values comprises computing a single hash value for the group of files (it is inherent that the invention disclosed by Nachenburg would use the method for scanning a file applied to scan the compressed file).

Application No. 10/734,501
Filing Date 12/12/2003

Docket JP920030154US1

The Appellant's Rebuttal

Regarding Claim 1:

The teaching by Nachenberg and well-known facts relied upon for the rejection do not teach or suggest "comparing each resource of the set of resources with a maximum size limit to identify a subset of the resources, wherein each resource of the subset is smaller than said size limit" and "retaining said subset of resources within said second storage medium" and "performing, for the subset of resources retained within said second storage medium, further operations on ones of the subset of resources" and the further operations are selected from operations including "making backup copies and transferring copies of the resources of the subset of resources to other systems," as recited in claim 1. All the limitations of the subject claims must be taught or suggested by the art relied upon. MPEP 2143.03 (citing In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974); In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)).

The Final Office Action asserts that it is obvious to compare each of a subset of resources with a maximum size limit to identify resources within said subset that are smaller than the size limit, since it is a common feature of memory management that data does not exceed a storage threshold. The Office Action further asserts that it is obvious to retain the subset within a second storage medium to enable further operations, arguing that it is obvious to hold in the second storage only an amount for which storage is available. In this connection, the Office Action points out that Nachenburg teaches the use of sectors (column 3 line 66 to column 4 line 10), which are fractions of the original file.

Applicant respectfully submits that claim 1 is patentably distinct. Claim 1 was amended in Reply A to specifically recite that the method further includes "comparing each resource of the set of resources with a maximum size limit to identify a subset of the resources, wherein each resource of the subset is smaller than said size limit" and the claim goes on to recite "retaining said subset of resources within said second storage medium." As the original application states, "Each of the set of resources is then compared with a predefined maximum size limit (such as 1 MB) to identify resources which are smaller than the size limit. Resources smaller than the size limit are retained within a buffer in the second storage medium to enable further operations to be performed without reading a further copy of

the resource from the first storage medium." Application 10/734,501, paragraph 0084, as published.

This earlier claim amendment emphasizes that, just as the specification teaches, *each* of the resources of the identified subset of resources that are read into the second storage medium is smaller than a size limit. That is, the claim, as amended in Reply A, states that the *subset of resources* is retained within said second storage medium and that *each resource* of the subset is smaller than the size limit. Furthermore, the claim makes it clear that there is more than one resource in the subset, so the size limit is not the same as the size of the space in the second storage medium for storing the entire subset. See, e.g., claim 1 ("retaining said subset of resources," where "resources" is explicitly plural).

Thus, it is clear that the well-known fact cited by the Office Action about a storage medium having a maximum capacity does not teach or suggest what is claimed. This well-known fact establishes merely that a storage medium cannot hold more than it can hold. But neither this, nor the teaching by Nachenburg about sectors, teaches or suggests "comparing each resource of the set of resources with a maximum size limit to identify a subset of the resources, wherein each resource of the subset is smaller than said size limit" and "retaining said subset of resources within said second storage medium," as recited in claim 1.

Also, claim 1 was amended in Reply A to specifically recite that the method includes "performing, for the subset of resources retained within said second storage medium, further operations on ones of the subset of resources." [2] This earlier amendment sets out the recited feature as an affirmative step, to emphasize the weight that should be given to the recited feature. It also emphasizes that for the further operations, the subset of the resources are retained in the second storage medium, i.e., not just selected ones of the resources of the subset. Nachenburg does not teach or suggest this feature. The claim goes on to state that the further operations are selected from operations including "making backup copies and transferring copies of the resources of the subset of resources to other systems." The Office

[2] With regard to this feature, claim 5, as originally submitted, recited "retaining . . . resources within said second storage medium to enable further operations."

Action merely replies that all this would have been obvious because it was known to make back up copies.

> To reiterate the above, the specification states that in an embodiment:
>
> A single read of a resource from a relatively slow-access storage medium (such as a hard disk or tape storage) may be used for multiple purposes including computing hash values and performing additional operations such as making backup copies or transferring copies of resources to other systems. In one such embodiment, the step of computing a new set of hash values comprises reading the set of resources from a first storage medium (such as disk storage) into a second storage medium (such as RAM) which provides faster access than the first storage medium, and computing the set of hash values. Each of the set of resources is then compared with a predefined maximum size limit (such as 1 MB) to identify resources which are smaller than the size limit. Resources smaller than the size limit are retained within a buffer in the second storage medium to enable further operations to be performed without reading a further copy of the resource from the first storage medium.

Application 10/734,501, paragraph 0084, as published. Claim 1, accordingly, recites "comparing each resource of the set of resources with a maximum size limit to identify a subset of the resources, wherein each resource of the subset is smaller than said size limit" and "retaining said subset of resources within said second storage medium" and "performing, for the subset of resources retained within said second storage medium, further operations on ones of the subset of resources" and the further operations are selected from operations including "making backup copies and transferring copies of the resources of the subset of resources to other systems."

All the limitations of the subject claims must be taught or suggested by the art relied upon. MPEP 2143.03 (citing In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974); In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)). However, the only specific reference offered by the Office Action with regard to any of the claim language recited in the paragraph immediately above is the use of sectors in Nachenberg, which may contain fractions of files. The Office Action offers no explanation of the significance of this teaching by Nachenberg, and merely argues that the claim language recited in the paragraph immediately above would have been obvious because of that teaching by Nachenberg about sectors and because it was known that a storage medium cannot hold more than it can hold

and it was known to make back up copies. This teaching by Nachenberg and these well-known facts do not teach or suggest all the limitations of the subject claims.

Regarding Claim 13

The Final Office action asserts that because Nachenberg, column 3, lines 14-15, discloses the use of Norton Antivirus and because, the Office action asserts, *Norton Antivirus Enterprise Solution 4.0* has a capability for "scanning compressed files," and asserts that Nachenberg, therefore, at least inherently discloses at least one resource of the set of resources comprises a group of files and that a single hash value is computed for the group of files.

Applicant respectfully disagrees. All the limitations of the subject claims must be taught or suggested by the art relied upon. MPEP 2143.03 (citing In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974); In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)). For at least two reasons "scanning compressed files" does not teach or suggest what is recited in claim 13, namely, "computing a single hash value for a group of files." Firstly, scanning is not the same as computing a hash. Secondly, even if scanning does involve computing a hash, the statement "scanning compressed files" does not mean, and the reference does not elsewhere teach or suggest, "computing a single hash value for a group of files." For these reasons, the rejection is improper.

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Application No. 10/734,501
Filing Date 12/12/2003

Docket JP920030154US1

REQUEST FOR ACTION

For the above reasons, Appellant contends the invention defined in independent claims 8 and 15 is patentably distinct and that dependent claims 10-14 and 16-20 are allowable at least because they depend upon respectively allowable independent claims 8 or 15. In addition, Appellant contends that the inventions defined in dependent claims 13 and 20 are also further patentably distinct for the above reasons. Appellant requests that the Board grant allowance and prompt passage of the application to issuance.

Respectfully submitted,

By Anthony V.S. England

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Attachments: Claims Appendix, Evidence Appendix, Related Proceedings Appendix

Application No. 10/734,501
Filing Date 12/12/2003

Docket JP920030154US1

APPENDIX "AA" CLAIMS

1. (previously presented) A method for controlling performance of operations in relation to a set of resources within a data processing network, the operations including a first operation, the method comprising the steps of:

computing a set of hash values representing a set of resources for which an operation has been performed;

storing the set of hash values;

in response to a requirement for performance of the operation, computing a new set of hash values representing the set of resources;

comparing the new hash values with the stored hash values for the set of resources to identify matches between new hash values and stored hash values;

determining that performance of the operation is not currently required for resources for which a match is identified between the respective new hash value and a stored hash value; performing the operation for resources for which no match is identified between the new hash value and any stored hash value;

wherein the step of computing a new set of hash values comprises:

reading the set of resources from a first storage medium of a system in the data processing network into a second storage medium of the system, the second storage medium providing faster access than the first storage medium, wherein the computing of the new set of hash values accesses the set of resources read to the second storage medium and the method further comprises:

comparing each resource of the set of resources with a maximum size limit to identify a subset of the resources, wherein each resource of the subset is smaller than said size limit; and

retaining said subset of resources within said second storage medium and

performing, for the subset of resources retained within said second storage medium, further operations on ones of the subset of resources, the further operations being selected from operations including:

making backup copies and transferring copies of the resources of the subset of resources to other systems.

Application No. 10/734,501
Filing Date 12/12/2003
Docket JP920030154US1

APPENDIX "AA" CLAIMS

2. (previously presented) The method of claim 1, wherein the first operation comprises scanning the resources to identify computer viruses.

3. (previously presented) The method of claim 1, wherein the first operation comprises making a backup copy of the resources.

4. (original) The method of claim 1, for controlling performance of virus scanning and backup copy operations in relation to a set of resources within a data processing network, the method comprising:

using said identification of a match between a respective new hash value and a stored hash value for a resource, resulting from a single comparison of new and stored hash values, to determine that neither virus scanning nor backup copy operations are currently required for the resource.

5. (canceled)

6. (previously presented) The method of claim 1, wherein the first operation comprises transferring a resource across a low bandwidth communication channel.

7. (original) The method of claim 1, wherein the steps of computing hash values comprise:

applying a secure hash function to a bit pattern representing a resource, for each of a set of resources.

8. (original) The method of claim 7, wherein the set of resources for which hash values are computed for a data processing system comprises the set of all files of executable file types on the system.

APPENDIX "AA" CLAIMS

9. (original) The method of claim 1, wherein the set of resources are distributed across a plurality of data processing systems within the network and the steps of storing the set of hash values and comparing the new hash values with the stored hash values are performed at a first data processing system within the network for the set of resources distributed across the plurality of data processing systems.

10. (original) The method of claim 9, wherein the steps of computing hash values for a resource are performed at a respective one of the plurality of data processing systems at which the resource is stored, the method further comprising sending the computed hash values to said first data processing system.

11. (previously presented) The method of claim 9, further comprising the step of sending, to each data processing system storing a resource for which it is determined that performance of the first operation is not currently required, an indication that performance of the first operation is not currently required for the resource.

12. (previously presented) The method of claim 9, wherein the step of performing the first operation is performed at the first data processing system and the result of performing the first operation is communicated to each of the plurality of data processing systems storing a resource for which the first operation is required.

13. (original) The method of claim 1, wherein at least one resource of the set of resources comprises a group of files and the step of computing a set of hash values comprises computing a single hash value for the group of files.

14. (original) The method of claim 13, wherein at least one resource of the set of resources is a compressed group of files.

15-63. (canceled)

Application No. 10/734,501
Filing Date 12/12/2003

Docket JP920030154US1

APPENDIX "BB" EVIDENCE

NONE.

Application No. 10/734,501
Filing Date 12/12/2003

Docket JP920030154US1

APPENDIX "CC" RELATED PROCEEDINGS

NONE.